

Appl. No. 09/767,379

Amdt. Dated May 6, 2004

Reply to Office Action of February 6, 2004

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A communications acquisition method, which comprises:

correlating a binary-coded spread sequence arriving at a frequency f and having m bits with a locally generated spread sequence having m bits, the locally generated spread sequence having k sections, the correlation comprising the following steps:

~~by phase shifting a multiplicity of locally generated spread sequences with respect to the received spread sequence, correlating the received spread sequence with a locally generated spread sequence at the frequency f ,~~

storing the received spread sequence,

~~and processing the stored, received spread sequence at an oversampling rate of $i \cdot f$, where i is an integer, and~~

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splitting the stored $[[,]]$ received spread sequence into
 $k \pm$ sections, and

~~carrying out the correlation in i steps~~

correlating the sections of the stored received spread
sequence at a frequency $k*f$ with corresponding sections
of the locally generated spread sequence.

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Claim 2 (currently amended): The method according to claim
1, which further comprises:

~~shifting the received spread sequence bit by bit within k
cycles in k section variants each having m bits at an
oversampling rate of $k*f$, where k is an integer, by shifting~~

upon correlating each section of the stored received spread
sequence, shifting the bits of the respective section by one
bit to replace the least significant bit of a first section
variant by a succeeding bit of the received spread sequence
and to shift a most significant bit of a section variant to a
position of a least significant bit of a succeeding section
variant;

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~~after k cycles, replacing the least significant bit by a succeeding bit of the received spread sequence and repeating the shifting and replacing steps $(m-1)$ times, subdividing the locally generated spread sequence into k sections each having n bits, where n is an integer, and comparing each of these sections with a section variant of the received spread sequence within a cycle, counting all matches and storing the count results~~

summing the correlation results obtained per section correlation step over k section correlation steps to obtain a count result;

repeating the shifting step $m-1$ times for obtaining $m-1$ further count results; and

carrying out a maximum search over all the m count results.

Claim 3 (original): The method according to claim 2, wherein a number of sections of prescribed length is $k=32$ and a chip length of the sections is $n=32$.

Claim 4 (currently amended): A correlator for performing a communications acquisition, comprising:

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a FIFO memory having a memory input and a memory output, said FIFO memory inputting and outputting content;

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a shift register with feedback for holding a received signal sequence in serial form, said shift register ~~being clocked at an oversampling rate and~~ having register positions connected in parallel to said memory input for parallel storage of a plurality of shift register contents read out in succession, said memory output being connected in parallel with said register positions for parallel transfer of data to said shift register;

a further memory for holding reference signal sequences; and

a comparator for comparing the content of said FIFO memory with a content of said further memory at ~~said oversampling rate~~;

the correlator programmed to perform the step of:

correlating a binary-coded spread sequence arriving at a frequency f and having m bits with a locally generated spread sequence by ~~phase-shifting a multiplicity of locally generated spread sequences with respect to the received spread sequence, correlating the received~~

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~~spread sequence with a locally generated spread sequence
at said frequency f ,~~

storing the received spread sequence;

splitting the stored received spread sequence into
 k sections; and

correlating the sections of ~~processing~~ the
stored[[,]] received spread sequence at a frequency
of $k*f$ with corresponding sections of the locally
generated spread sequence ~~said oversampling rate~~
~~equal to $i*f$, where i is an integer, and splitting~~
~~the stored, received spread sequence into i~~
~~sections and carrying out the correlation in i~~
~~steps.~~

AS Cont.

Claim 5 (original): The correlator according to claim 4,
wherein said comparator has a comparator output, and
including an adder comprising two-bit adders configured to
form a cascaded interconnection, each of said two-bit adders
having at least two inputs and an output, said output of each
of said two-bit adders connected to one of said at least two
inputs of a succeeding one of said two-bit adders, said adder
connected to said comparator output and configured to add up
logic values produced during bit-by-bit comparison for
matching bit positions.